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Leased lines are provisioned over an internet protocol communications network supporting differentiated services by providing bandwidth tallies at each node and link in the network. Traffic to be sent over the leased line is labelled as high priority at the entry point to the leased line. Differentiated services mechanisms are set up at each node in the route to allow high priority traffic on the leased line to be processed before other traffic. A customer requests a leased line between two points and with a specified bandwidth and quality of service. A route between the two specified points is chosen, for example, using an algorithm such as shortest path first (SPF). The route may be pinned e.g. using MPLS. Bandwidth tallies are checked along the chosen path to ensure that the requested bandwidth is available. As well as this checks are made to ensure that no more than a threshold level of high priority traffic will be present at any one node or link. A discrete event simulator may also be used to forecast congestion points in the network. If insufficient bandwidth or node resources are available, the network is either reconfigured or the leased line proposal rejected. Once the network is configured such that sufficient bandwidth is available and high priority traffic levels will not exceed the threshold level, the leased line is available for use.